Attachment 1
WDEQ 1998 Water Quality
Monitoring Schedule

This document was developed from Wyoming Department of Environmental Quality (WDEQ) memoranda coordinating the State's monitoring program for 1998. It is organized around three working regions but certain provisions apply for the entire State. These include:

1. Segments where at least one station's worth of data was collected during past Reference Stream monitoring work are identified with an (*) . These can be used as part of the overall assessment of the waterbody in question.

2. The timing of monitoring is only an estimate based on location and size. Basically the schedule lists waters with lower elevation headwaters for initial sampling, followed by early fall sampling of high elevation streams, followed lastly by low elevation waters with high elevation headwaters at the end of the sample period. A lot of in-field decisions will be made on "when to schedule" (runoff, precipitation events, etc.).

3. WDEQ developed Tables 1-13 through an assessment of the 1998 303(d) List, i.e., Tables A, B, and C. Table A is a list of those stream segments requiring monitoring for TMDL development. Table B is a list of those waterbodies requiring additional or updated monitoring data to accurately set a Waste Load Allocation (WLA) and TMDL due to NPDES renewal process. Table C is a list of threatened waterbodies. Also, the Monitoring List of stream segments with secondary or inconclusive data requiring Beneficial Use Reconnaissance Process (BURP) monitoring were evaluated as well.

Cheyenne/Casper Personnel

Following is the monitoring schedule for the WDEQ Cheyenne staff. Mark Conrad, as the staff member with bioassessment experience, will serve as team leader and assisting the others with training questions.

Table 1. Stream Segments with Secondary or Inconclusive Data Requiring BURP Monitoring.

Basin	HUC ID	Name	Segment	Conser. Dist.	Timing ?
L. Missouri	10110201	L. Missouri R.	001-4	Devils Tower	Late Aug
L. Missouri	10110201	L. Missouri R., N. Fk.	002-3	Devils Tower	Late Aug
N. Platte	10180011	Chugwater Cr.*	059-3	Platte County	Late Aug
S. Platte	10190009	Crow Cr.*	002-3	Laramie Co.	Late Aug
Powder	10090201	Powder R., M. Fk.	030-3	Powder River	Early Oct
Powder	10090201	Powder R., N. Fk.	068-2	Powder River	Early Oct
Powder	10090201	Powder R., Red Fk.	070-2	Powder River	Early Oct
Powder	10090201	Bear Trap Cr.	071-2	Powder River	Late Sept
Powder	10090201	Bear Trap Cr.*	322-1	Powder	Late

				River	Sept
Powder	10090201	Beaver Cr.	072-2	Powder River	Late Sept
Powder	10090201	Powder R., M. Fk.*	073-2	Powder River	Late Sept
Powder	10090201	Webb Cr.	155-1	Lake DeSmet	Late Sept
Powder	10090201	Rock Cr.	293-1	Powder River	Late Sept
Powder	10090201	Blue Cr.	295-1	Powder River	Late Sept
Powder	10090201	Arch Cr.	301-1	Powder River	Late Sept
Powder	10090201	Sawmill Cr.	302-1	Powder River	Late Sept
Powder	10090201	Pass Cr.	303-1	Powder River	Late Sept
Powder	10090202	Spotted Horse Cr.	044-2	Sheridan Co.	Early Sep
Powder	10090202	Spotted Horse Cr.	172-1	Intermountain	Early Sep
Powder	10090202	Pumpkin Cr.	049-2	Powder River	Early Sep
Powder	10090202	Ninemile Cr.	054-2	Powder River	Early Sep
Powder	10090202	Ninemile Cr.	310-1	Powder River	Early Sep
Powder	10090202	Fourmile Cr.	055-2	Powder River	Early Sep
Powder	10090204	Castle Cr.	076-2	Natrona Co.	Early Sep
Powder	10090204	Meadow Cr.*	256-1	Powder River	Early Sep
Powder	10090204	Teapot Cr.	260-1	Natrona Co.	Early Sep

*Segment has station established as part of the Reference Stream Project.

BURP level monitoring will be conducted on nine of the eleven “high” priority sites in 1998. 5 of those 9 are in the Cheyenne/Casper area and are listed in Table 2. The Belle Fourche River fecal impairment monitoring will require the use of portable fecal equipment. Again, this requires five samples from each station, taken over a 30 day period for calculation of geometric means. It is suggested a set of samples is done upon arriving in the area, beginning the Little Missouri River sites, collecting a second set of fecals, finishing up the Little Missouri sites, collecting a third set of fecals before going home, and then returning within the required period to collect two more sets of fecals.

Table 2. Stream Segments Requiring Monitoring for TMDL Development.

Basin	HUC ID	Name (Impairment)	Segment	Conser. Dist.	Timing
Belle Fourche	10120201	Belle Fourche R. (Fecal bacteria)	004-4	Devils Tower	Late Aug.
Belle Fourche	10120201	Belle Fourche R. (Fecal bacteria)	009-4	Devils Tower	Late Aug.
N. Platte	10180011	Wheatland Cr. (NH3)	311-1	Platte Co.	Aug.
Powder	10090202	Powder R. (Chloride)	020-4	Powder River	Early Oct
S. Platte	10190009	Crow Cr.* (Fecal, NH3, Cd)	001-3	Laramie Co	Aug.

*Segment has station established as part of the Reference Stream Project.

Statewide, DEQ has identified 5 waterbodies from 303(d) Table B (Waterbodies requiring TMDLs due to NPDES renewal process) needing additional or updated monitoring data to accurately set a Waste Load Allocation (WLA). Three of those are located within the area covered by Cheyenne/Casper and are listed in Table 3. One location, Belle Fourche River receiving effluent from the Hulett WWTP, is also the segment (004-4) scheduled for TMDL development.

Table 3. Monitoring Necessary for Waste Load Allocation TMDLs.

Basin	HUC ID	Name (Point Source)	Segment	Conser. Dist.	Timing
N. Platte	10180002	North Platte (Saratoga WWTP) - BOD, TSS, NH3, Fecal, TRC	039-4	Sar-Enc-Raw	Early Oct.
N. Platte	10180011	Wheatland Cr. (Wheatland WWTP) - NH3, Fecal, TRC	311-1	Platte Co.	Aug.
Belle Fourche	10120201	Belle Fourche R. (Hulett WWTP) - NH3, Fecal, TRC	004-4	Devils Tower	Late Aug.

Two threatened waters (Table C) have been identified in this area. McMasters Reservoir may be a Use Attainability Analysis issue and is scheduled for monitoring in 1999. Salt Creek is listed as threatened because of the history of spills in this very old oil field and is scheduled for monitoring in 1998 along with other waters in its HUC.

Table 4. Monitoring Necessary for Threatened Waterbodies.

Basin	HUC ID	Name (Threat)	Segment	Conser. Dist.	Timing
Powder	10090204	Salt Cr.* (Oil Spills, TDS)	035-3	Powder River	Early Sept.

*Segment has station established as part of the Reference Stream Project.

Monitoring will continue on the Long Term Trend Reference Sites. There are six

of these located within the area covered from the Cheyenne/Casper Offices and are listed in Table 5. These sites will be monitored when there is not a complete crew. For example, if sickness, vacation, or meetings results in a one person crew for a few days, that individual should go out a collect data on one of these sites.

Table 5. Long Term Trend Reference Sites Requiring Monitoring in 1998.

Ref. ID	Reference Stream Name	County	Location	Timing
SR3	Rock Creek	Carbon	Sec. 36, T19, R79	Sept.
SR15	Encampment R. - Wildern.	Carbon	Sec. 15, T12, R84	Sept.
SR16	N. Fk. Little Snake R.	Carbon	Sec. 14, T12, R86	Sept.
WB3	Little Laramie R.	Albany	Sec. 1 , T15, R77	Sept.
WBI4	Deweese Cr.	Carbon	Sec. 13, T27, R85	Sept.
WHPI6	Crow Cr.- Cheyenne Sta.6	Laramie	Sec. 26, T14, R67	Sept.

Lander Personnel

Andrea James, Teton Science School Intern, will be working with the Lander staff through August. The Lander Office will have a second intern come on board sometime in early September.

Table 6. Stream Segments with Secondary or Inconclusive Data Requiring BURP Monitoring.

Basin	HUC ID	Name	Segment	Conser. Dist.	Timing ?
Big Horn/Wind	10080003	Little Popo Agie R.*	079-3	Popo Agie	Early Oct.
Big Horn/Wind	10080007	Cottonwood Cr.	059-3	Washakie	Late Aug.
Big Horn/Wind	10080007	Cottonwood Cr.	060-3	Hot Springs	Late Aug.
Big Horn/Wind	10080007	Grass Cr.	124-2	Hot Springs	Late Aug.
Bear	16010101	Twin Cr.*	004-3	Lincoln Co.	Early Sep
Bear	16010101	Twin Cr.	012-2	Lincoln Co.	Early Sep
Bear	16010101	Twin Cr., S. Fk.	026-1	Lincoln Co.	Early Sep
Bear	16010101	Bear R.*	006-3	Uinta Co.	Late Sep.
Bear	16010101	Bear R.*	007-3	Uinta Co.	Late Sep.

Bear	16010101	Bear R.*	008-3	Uinta Co.	Late Sep.
Bear	16010101	Bear R.	058-4	Uinta Co.	Late Sep.
Bear	16010101	Mill Cr.	015-2	Uinta Co.	Early Sep
Bear	16010101	Sulphur Cr.	016-2	Uinta Co.	Late Sep
Bear	16010101	Pleasant Valley Cr.	031-1	Uinta Co.	Early Sep
Bear	16010102	Bear R.	003-2	Lincoln Co.	Late Sep
Bear	16010102	Bear R., Smiths Fk.*	009-3	Lincoln Co.	Late Sep
Bear	16010102	Salt Cr. (Thomas Fk.)*	010-3	Lincoln Co.	Late Sep
Bear	16010102	Sublette Cr.	037-1	Lincoln Co.	Late Sep
Bear	16010102	Coal Cr.*	040-1	Lincoln Co.	Late Sep
Bear	16010102	Coantag Cr.	045-1	Lincoln Co.	Late Sep
Bear	16010102	Mill Cr.	055-1	Lincoln Co.	Late Sep
Green	14040101	Green R.	012-4	Lincoln Co	Early Oct
Green	14040101	Green R.	013-4	Sublette Co.	Early Oct
Green	14040101	Fontenelle Cr.*	049-2	Lincoln Co.	Late Sep
Green	14040101	Fontenelle Cr.*	186-1	Lincoln Co.	Late Sep
Green	14040101	Birch Cr.	051-2	Lincoln Co.	Early Sep
Green	14040101	Rock Cr.*	194-1	Sublette Co.	Early Sep
Green	14040101	Muddy Cr.	207-1	Sublette Co.	Early Sep
Green	14040101	Dry Piney Cr.	278-1	Sublette Co.	Early Sep
Green	14040102	New Fk. R.*	029-3	Sublette Co.	Late Sep
Green	14040102	New Fk. R.	060-2	Sublette Co.	Late Sep
Green	14040102	Pole Cr.	238-1	Sublette Co.	Late Sep
Green	14040103	Green R.	009-4	Big Sandy	Late Sep
Green	14040103	Alkali Cr.	128-1	Big Sandy	Early Sep
					Early

Green	14040104	Big Sandy R.	026-3	Big Sandy	Sep
Green	14040104	Little Sandy R.*	149-1	Sublette Co.	Early Sep
Green	14040107	Green R., Blacks Fk.	002-5	Big Sandy	Early Oct
Green	14040107	Green R., Blacks Fk.	004-5	Big Sandy	Early Oct
Green	14040107	Green R., Smiths Fk.	017-3	Uinta Co.	Early Oct
Green	14040107	Green R., Hams Fk.	045-2	Lincoln Co.	Sept
Green	14040107	Willow Cr.	171-1	Lincoln Co.	Early Sep
Green	14040108	Albert Cr.	021-3	Uinta Co.	Early Sep
Green	14040109	Vermillion Cr.	025-3	Big Sandy	Oct
Green	14040109	Vermillion Cr., N. Fk.	124-1	Big Sandy	Oct

*Segment has station established as part of the Reference Stream Project.

BURP level monitoring will be conducted on nine of the eleven “high” priority sites placed on the 303(d) list of impaired waters in 1998. The Lander staff will be investigating 2 of those 9 waterbodies as shown in Table 7.

Table 7. Stream Segments Requiring Monitoring for TMDL Development.

Basin	**HUC ID**	**Name (Impairment)**	**Segment**	**Conser. Dist.**	**Timing**
Green R.	14040107	Green R., Hams Fk. (pH)	020-3	Lincoln Co.	Sept.
N. Platte R.	10180006	Crooks Cr. (Oil Deposits)	678-2	Popo Agie	Early Oct.

*Segment has station established as part of the Reference Stream Project.

Statewide, 5 waterbodies from 303(d) Table B (Waterbodies requiring TMDLs due to NPDES renewal process) are identified as needing additional or updated monitoring data to accurately set a WLA. One of those, shown in Table 8, is located within the area covered by Lander. That waterbody, Green River, Hams Fork, receiving effluent from the Kemmerer WWTP, is also the segment (020-3) scheduled for TMDL development. In addition, there has been a request to conduct a Use Attainability Analysis on Bitter Creek (WYGR14040105-024-3). This segment is in the vicinity of the City of Rock Springs and is currently a Class 4 water.

Table 8. Monitoring Necessary for Waste Load Allocation TMDLs .

Basin	**HUC ID**	**Name (Point Source)**	**Segment**	**Conser. Dist.**	**Timing**
Green R.	14040107	Green R., Hams Fk.- NH3, Fecal, TRC (Kemmerer WWTP)	020-3	Lincoln Co.	Sept.

All threatened waters (Table C) in the area covered by the Lander staff are

associated with watershed improvement plans. Monitoring of these waterbodies is being conducted by the group implementing the plan.

There are six Long Term Trend Reference Sites located within the area covered from the Lander Office and are listed in Table 9. These sites should be monitored when there is not a complete crew. For example, if sickness, vacation, or meetings results in a one person crew for a few days, that individual should go out a collect data on one of these sites.

Table 9. Long Term Trend Reference Sites Requiring Monitoring in 1998.

Ref. ID	Reference Stream Name	County	Location	Timing
WB23	Fontenelle Cr. - Lower	Lincoln	Sec. 2, T.24N., R.113W.	Sept.
WB28	New Fork R. - Bull Pasture	Sublette	Sec. 24, T.34N., R.110W.	Sept.
MRW56	W.Fk. Smiths Fork	Uinta	Sec.10, T.12N., R.116W.	Sept.
MRW1	Cache Cr.	Teton	Sec.1, T.40N., R.116W.	Sept.
MRW3	Snake R. - Flagg Ranch	Teton	Sec.28, T.48N., R.115W.	Sept.
MRW-17	Roaring Fk.	Sublette	Sec.10, T.39N., R.109W.	Sept.

Sheridan Personnel

The Cheyenne/Casper staff will be moving up into the southern Powder River Basin during the latter part of the summer. They will hopefully be available late in the sampling period to help Sheridan crews.

Big Goose and Little Goose Creeks have been listed as impaired for fecal bacteria. DEQ will need to collect a minimum of 5 fecal samples at each to-be-selected station within a 30 day period during the current recreational season (May 1 - Sept. 30) in order to arrive at a geometric mean. It is suggested that stations on these creeks be selected relatively soon and samples be taken.

Table 10. Stream Segments with Secondary or Inconclusive Data Requiring BURP Monitoring.

Basin	HUC ID	Name	Segment	Conser. Dist.	Timing ?
Tongue	10090101	Tongue R.	001-5	Sheridan Co.	Early Oct
Tongue	10090101	Tongue R.	003-4	Sheridan Co.	Early Oct
Tongue	10090101	Tongue R.*	007-3	Sheridan Co.	Early Oct
Tongue	10090101	Prairie Dog Cr.*	019-2	Sheridan Co.	Early Oct
Tongue	10090101	Little Goose Cr.*	020-2	Sheridan Co.	Early Oct

Tongue	10090101	Little Tongue R.*	022-2	Sheridan Co.	Early Oct
Tongue	10090101	Tongue River, South*	025-2	Sheridan Co.	Early Sep
Tongue	10090101	Tongue River, North*	026-2	Sheridan Co.	Early Sep
Tongue	10090101	Soldier Cr.	047-1	Sheridan Co.	Early Oct
Tongue	10090101	Sucker Cr.	054-1	Sheridan Co.	Early Sep
Tongue	10090101	Big Willow Cr.*	057-1	Sheridan Co.	Early Sep
Tongue	10090101	Bull Cr.*	058-1	Sheridan Co.	Early Sep
Tongue	10090101	Prune Cr.*	101-1	Sheridan Co.	Early Sep
Powder	10090205	Crazy Woman Cr.*	014-4	Lake DeSmet	Early Oct
Powder	10090205	Crazy Woman Cr., N. Fk.*	028-3	Lake DeSmet	Late Aug
Powder	10090205	Crazy Woman Cr., S. Fk.	029-3	Lake DeSmet	Late Aug
Powder	10090205	Crazy Woman Cr., S. Fk.	067-2	Lake DeSmet	Sept
Powder	10090205	Doyle Cr.	065-2	Lake DeSmet	Late Aug
Powder	10090205	Doyle Cr.	154-1	Lake DeSmet	Late Aug
Powder	10090205	L.N.Fk Crazy Woman*	145-1	Lake DeSmet	Late Aug
Powder	10090205	Pole Cr.	146-1	Lake DeSmet	Sept
Powder	10090205	Muddy Cr.*	148-1	Lake DeSmet	Late Aug
Powder	10090205	Billy Cr.	150-1	Lake DeSmet	Late Aug
Powder	10090205	Poison Cr.	151-1	Lake DeSmet	Late Aug
Powder	10090205	Poison Cr.	152-1	Lake DeSmet	Late Aug
Powder	10090205	Crazy Woman Cr., M. Fk.*	153-1	Lake DeSmet	Sept
Powder	10090205	Pole Cr.	160-1	Lake DeSmet	Late Aug
Powder	10090205	Muddy Cr.*	306-2	Lake DeSmet	Late Aug
Powder	10090206	Clear Cr.	007-4	Lake DeSmet	Early Oct
Powder	10090206	Clear Cr.	008-4	Lake DeSmet	Early Oct
					Early

Powder	10090206	Clear Cr.	009-4	Lake DeSmet	Oct
Powder	10090206	Clear Cr.	010-4	Lake DeSmet	Early Oct
Powder	10090206	Clear Cr.*	011-4	Lake DeSmet	Early Oct
Powder	10090206	Rock Cr.	025-3	Lake DeSmet	Early Oct
Powder	10090206	Rock Cr., N. Fk	058-2	Lake DeSmet	Sept
Powder	10090206	Bull Cr.	062-2	Lake DeSmet	Late Sept
Powder	10090206	Boxelder Cr.	122-1	Lake DeSmet	Late Sept
Powder	10090206	Little Piney Cr.	127-1	Lake DeSmet	Late Sept
Powder	10090206	French Cr.	136-1	Lake DeSmet	Late Sept
Powder	10090206	Sourdough Cr.	140-1	Lake DeSmet	Sept
Powder	10090206	L. Sourdough Cr.	140-1	Lake DeSmet	Sept
Powder	10090206	Piney Cr., S*	323-1	Lake DeSmet	Late Sept

*Segment has station established as part of the Reference Stream Project.

BURP level monitoring will be conducted on nine of the eleven “high” priority Impaired waterbodies in 1998. The Sheridan crew has 3 of those 9 are in their area as listed in Table 11. Again, Big Goose and Little Goose Creeks are listed for fecal bacteria. The stations and necessary monitoring to arrive at geometric means should be initiated as soon as possible. Hunter Creek is scheduled for TMDL development in the next two years. There are currently data from two 1997 bioassessment stations on Hunter Creek and the cause of impairment is recognized. Additional data may not be necessary to establish the TMDL.

Table 11. Stream Segments Requiring Monitoring for TMDL Development.

Basin	**HUC ID**	**Name (Impairment)**	**Segment**	**Conser. Dist.**	**Timing ?**
Powder	10090206	Hunter Cr.* (Sediment)	???-1	Lake DeSmet	Early Sept
Tongue	10090101	Big Goose Cr.* (Fecal)	006-3	Sheridan Co.	Aug.
Tongue	10090101	Little Goose Cr.* (Fecal)	020-2	Sheridan Co.	Aug.

*Segment has station established as part of the Reference Stream Project.

Statewide, DEQ has identified 5 waterbodies from 303(d) Table B (Waterbodies requiring TMDLs due to NPDES renewal process) needing additional or updated monitoring data to accurately set a WLA. One of those, as shown in Table 12, is located within the area covered by Sheridan.

Table 12. Monitoring Necessary for Waste Load Allocation TMDLs (Table B).

Basin	HUC ID	Name (Point Source)	Segment	Conser. Dist.	Timing
Tongue	10090101	Goose Cr.* (Sheridan WWTP) - NH3, Fecal, TRC	105-3	Sheridan Co.	Early Oct.

All threatened waters (Table C) identified in the Sheridan area are associated with watershed assessment or watershed improvement plans. Monitoring will be conducted by the parties involved in those plans.

There are seven Long Term Trend Reference Sites located within the area covered from the Sheridan Office. These sites should be monitored when there is not a complete crew. For example, if sickness, vacation, or meetings result in a one person crew for a few days, that individual should go out a collect data on one of these sites. The exceptions are the two sites (Middle Cr. and Crow Cr.) located in grizzly bear country. Two people should be present for these monitoring efforts. Also, it may be more efficient to have the Cheyenne/Casper crew catch the Whitelaw Creek site when they are in the Belle Fourche area; that can be coordinated with Mark Conrad.

Table 13. Long Term Trend Reference Sites Requiring Monitoring in 1998.

Ref. ID	Reference Stream Name	County	Location	Timing ?
MRE1	Whitelaw Cr. - Upper	Crook	Sec. 9, T52, R63	Late Sept.
MRC18	Little Bighorn R.	Sheridan	Sec. 20, T58, R89	Late Sept.
MRC26	N. Fk. Crazy Woman Cr.	Johnson	Sec. 36, T49, R84	Sept.
MRC24	Tongue R.	Sheridan	Sec. 10 , T56, R84	Sept.
MRCI29	Muddy Cr. - Middle	Johnson	Sec. 35, T49, R83	Sept.
MRW45	Middle Cr.	Yel. NP	Sec. 18, T52, R109	Sept.
MRW18	Crow Cr.	Park	Sec. 3, T52, R109	Sept.